

WHAT IS CLAIMED IS:

1 1. A wireless network capable of providing a MS-MS packet
2 data call between a source mobile station (MS) and a destination
3 mobile station (MS), said wireless network comprising:
4 a first base station capable of wirelessly communicating with
5 said source mobile station;
6 a second base station capable of wirelessly communicating with
7 said destination mobile station;
8 a mobile switching center capable of connecting said first and
9 second base stations; and
10 a local Internet protocol (IP) network capable of transferring
11 data packets associated with said MS-MS packet data call directly
12 between said first and second base stations via a first packet data
13 bearer connection, wherein said first base station is capable of
14 receiving a first message from said source mobile station
15 indicating that said source mobile station is to be handed off to a
16 third base station, and wherein said first base station, in
17 response to said first message, initiates establishment of a second
18 packet data bearer connection on said local IP network for
19 transferring said data packets associated with said MS-MS packet
20 data call directly between said second and third base stations.

1 2. The wireless network as set forth in Claim 1, wherein
2 said first message contains signal strength measurements associated
3 with said third base station.

1 3. The wireless network as set forth in Claim 1, wherein
2 said first base station is operable to respond to said first
3 message by transmitting a second message to said mobile switching
4 center indicating that said source mobile station is being handed
5 off to said third base station and wherein said second message
6 contains: 1) an IP address of said second base station on said
7 local IP network; 2) a service option field associated with said
8 MS-MS packet data call; 3) a call identifier value used by said
9 first and second base stations to identify said MS-MS packet data
10 call; and 4) mobile identifier values associated with said source
11 and destination mobile stations.

1 4. The wireless network as set forth in Claim 3, wherein
2 said second message comprises a Handoff Required message.

1 5. The wireless network as set forth in Claim 3, wherein
2 said mobile switching center is operable to respond to said second
3 message by transmitting a third message to said third base station,
4 wherein said third message contains: 1) said IP address of said
5 second base station on said local IP network; 2) said service
6 option field associated with said MS-MS packet data call; 3) said
7 call identifier value used by said first and second base stations
8 to identify said MS-MS packet data call; and 4) said mobile
9 identifier values associated with said source and destination
10 mobile stations.

1 6. The wireless network as set forth in Claim 5, wherein
2 said third message comprises a Handoff Request message.

1 7. The wireless network as set forth in Claim 5, wherein
2 said third base station responds to said third message by
3 establishing said second packet data bearer connection with said
4 second base station.

1 8. The wireless network as set forth in Claim 7, wherein
2 said third base station establishes said second packet data bearer
3 connection using 1) said IP address of said second base station; 2)
4 said call identifier value used by said first and second base
5 stations to identify said MS-MS packet data call; and 3) said
6 mobile identifier values associated with said source and
7 destination mobile stations.

1 9. The wireless network as set forth in Claim 7, wherein
2 said second base station responds to establishment of said second
3 packet data connection by said third base station by transmitting
4 data packets associated with said MS-MS packet data call to said
5 third base station via said second packet data bearer connection.

1 10. The wireless network as set forth in Claim 9, wherein
2 said mobile switching center is operable to transmit a fourth
3 message to said first base station after said source mobile station
4 is handed off to said third base station, and wherein said fourth
5 message causes said first base station to notify said second base
6 station that said first packet data bearer connection between said
7 first and second base stations is being removed.

1 11. The wireless network as set forth in Claim 10, wherein
2 said second base station, in response to said notification from
3 said first base station that said first packet data bearer
4 connection is being removed, ceases transmitting data packets
5 associated with said MS-MS packet data call to said first base
6 station.

1 12. For use in a wireless network comprising: i) a first base
2 station that wirelessly communicates with a source mobile station
3 (MS); ii) a second base station that wirelessly communicates with a
4 destination mobile station (MS); iii) a mobile switching center
5 that connects the first and second base stations; and iv) a local
6 Internet protocol (IP) network that transfers data packets
7 associated with the MS-MS packet data call directly between the
8 first and second base stations via a first packet data connection,
9 a method of handling a MS-MS packet data call between the source
10 mobile station and the destination mobile station comprising the
11 steps of:

12 receiving in the first base station a first message from the
13 source mobile station indicating that the source mobile station is
14 to be handed off to a third base station; and

15 in response to the first message, initiating establishment of
16 a second packet data bearer connection on the local IP network for
17 transferring the data packets associated with the MS-MS packet data
18 call directly between the second and third base stations.

1 13. The method as set forth in Claim 12, wherein the first
2 message contains signal strength measurements associated with the
3 third base station.

1 14. The method as set forth in Claim 12, further comprising
2 the step, in response to the first message, of transmitting a
3 second message from the first base station to the mobile switching
4 center indicating that the source mobile station is being handed
5 off to the third base station, wherein the second message contains:
6 1) an IP address of the second base station on the local IP
7 network; 2) a service option field associated with the MS-MS packet
8 data call; 3) a call identifier value used by the first and second
9 base stations to identify the MS-MS packet data call; and 4) mobile
10 identifier values associated with the source and destination mobile
11 stations.

1 15. The method as set forth in Claim 14, wherein the second
2 message comprises a Handoff Required message.

1 16. The method as set forth in Claim 14, further comprising
2 the step, in response to the second message, of transmitting a
3 third message from the mobile switching center to the third base
4 station, wherein the third message contains: 1) the IP address of
5 the second base station on the local IP network; 2) the service
6 option field associated with the MS-MS packet data call; 3) the
7 call identifier value used by the first and second base stations to
8 identify the MS-MS packet data call; and 4) the mobile identifier
9 values associated with the source and destination mobile stations.

1 17. The method as set forth in Claim 16, wherein the third
2 message comprises a Handoff Request message.

1 18. The method as set forth in Claim 16, wherein the third
2 base station responds to the third message by establishing the
3 second packet data bearer connection with the second base station.

1 19. The method as set forth in Claim 18, wherein the third
2 base station establishes the second packet data bearer connection
3 using 1) the IP address of the second base station; 2) the call
4 identifier value used by the first and second base stations to
5 identify the MS-MS packet data call; and 3) the mobile identifier
6 values associated with the source and destination mobile stations.

1 20. The method as set forth in Claim 18, further comprising
2 the step, in response to establishment of the second packet data
3 bearer connection by the third base station, of transmitting data
4 packets associated with the MS-MS packet data call from the second
5 base station to the third base station via the second packet data
6 bearer connection.

1 21. The method as set forth in Claim 20, further comprising
2 the step of transmitting a fourth message from the mobile switching
3 center to the first base station after the source mobile station is
4 handed off to the third base station, wherein the fourth message
5 causes the first base station to notify the second base station
6 that the first packet data bearer connection between the first and
7 second base stations is being removed.

1 22. The method as set forth in Claim 21, further comprising
2 the step, in response to the notification from the first base
3 station that the first packet data bearer connection is being
4 removed, of ceasing transmission of data packets associated with
5 the MS-MS packet data call from the second base station to the
6 first base station.